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# **Transportation GMAP Forum**

## **November 29, 2006**

**TAB 2: Initial Report on Cabinet Strategic Action Plan Goals:**

Highway Project Delivery  
Incident Response (with WSP)  
Road Conditions  
Bridge Conditions

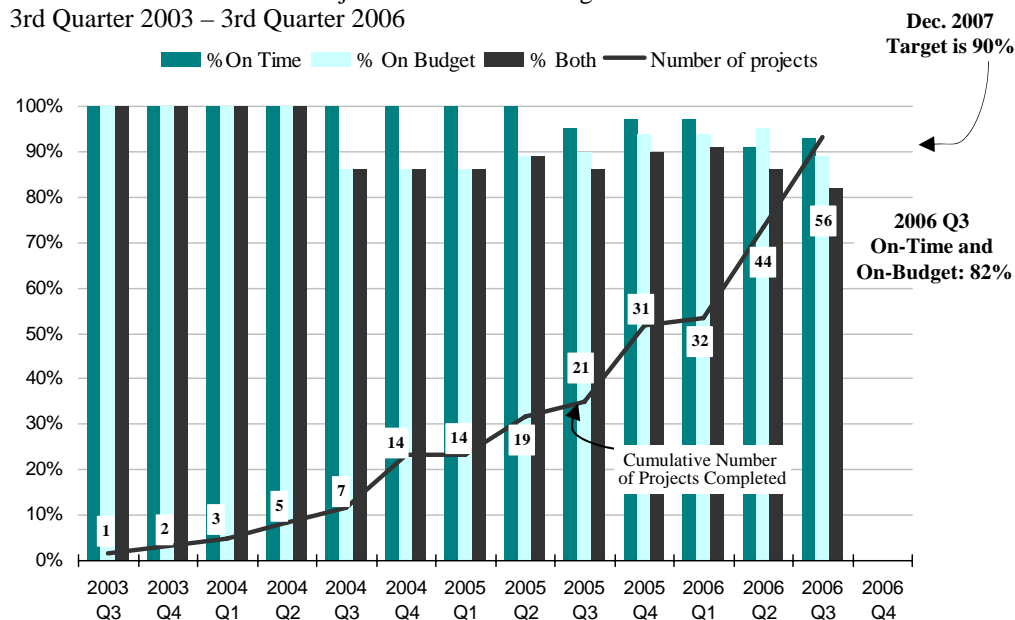
# **Cabinet Strategic Action Plan Goals Related to WSDOT: “Keep Washington Moving”**

## Summary of goals:

- Complete 90% of highway projects on time and on budget;
- Reduce the total average duration of over 90 minute incidents by 5% for nine of the most congested routes;
- Preserve or improve the condition of our roads at 90% satisfactory or good condition;
- Preserve or improve the condition of our bridges at 97% satisfactory or good condition.

# What is WSDOT's Record in Delivering 90% of Highway Projects On-Time and On-Budget?

Cumulative Nickel & TPA Project Schedule and Budget Performance  
3rd Quarter 2003 – 3rd Quarter 2006



Source: WSDOT Project Control & Reporting

## Analysis:

WSDOT continues to deliver Nickel and TPA projects in both packages: 12 additional projects have been completed since the August GMAP forum, for a total of 56.

### On Budget:

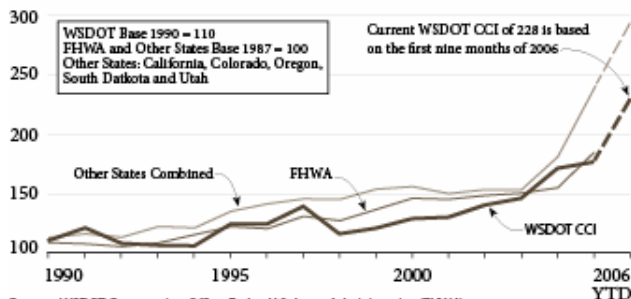
- The average number of bidders has declined slightly – now 3.0, down from 3.1 at the August forum.
- The Construction Cost Index has remained high – 30% above the 2005 annual average.

### On Time:

- As described in the *2007-09 Budget Request*, WSDOT's recommended strategy to mitigate the gap in available funding versus updated project costs will involve structuring the timing of delivery of whole projects or stages of projects to match available funds. This will result in the delay of some projects.

## Related Data through 3<sup>rd</sup> Quarter 2006

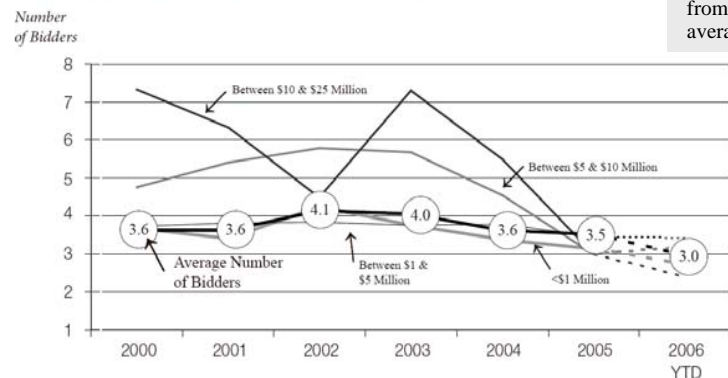
### Construction Cost Indices Washington State and Others



Sources: WSDOT Construction Office, Federal Highway Administration (FHWA)  
Note: WSDOT 2006 Index is for Quarters 1, 2 & 3; Other States 2006 Index based on Oregon and Utah 1, 2 & 3 quarter data; 3 quarter data not available for California, Colorado and South Dakota; 2006 data not available for FHWA.  
Note: 2003 and 2004 WSDOT CCI data points adjusted to correct for spiking bid prices on structural steel.

Construction Cost Index has increased over 30% from the 2005 annual average.

### Average Number of Bidders by Size of Contract



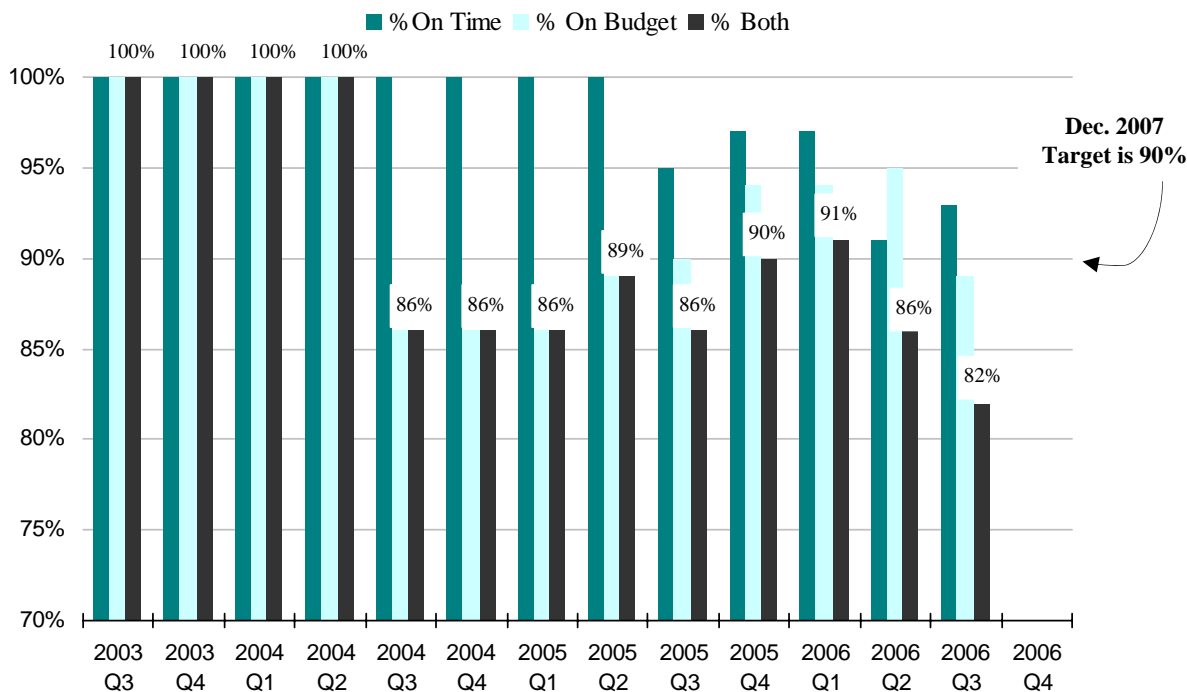
Average number of contractors bidding on each WSDOT project decreased 14% in the first three quarters of 2006 from 2005 average.

	2000	2001	2002	2003	2004	2005	2006 YTD
1 Bidder	8%	12%	12%	8%	13%	9%	15%
2 Bidders	26%	23%	22%	18%	20%	22%	36%
3 Bidders	24%	23%	16%	24%	23%	33%	17%
3 or more Bidders	66%	64%	65%	74%	66%	69%	48%

# DETAILED VIEW OF CHART FROM SLIDE 3

## Highway Projects On-Time and On-Budget

Cumulative Nickel & TPA Project Schedule and Budget Performance  
3rd Quarter 2003 – 3rd Quarter 2006  
Y-Axis Adjusted: chart included for readability purposes only.



Source: WSDOT Project Control & Reporting

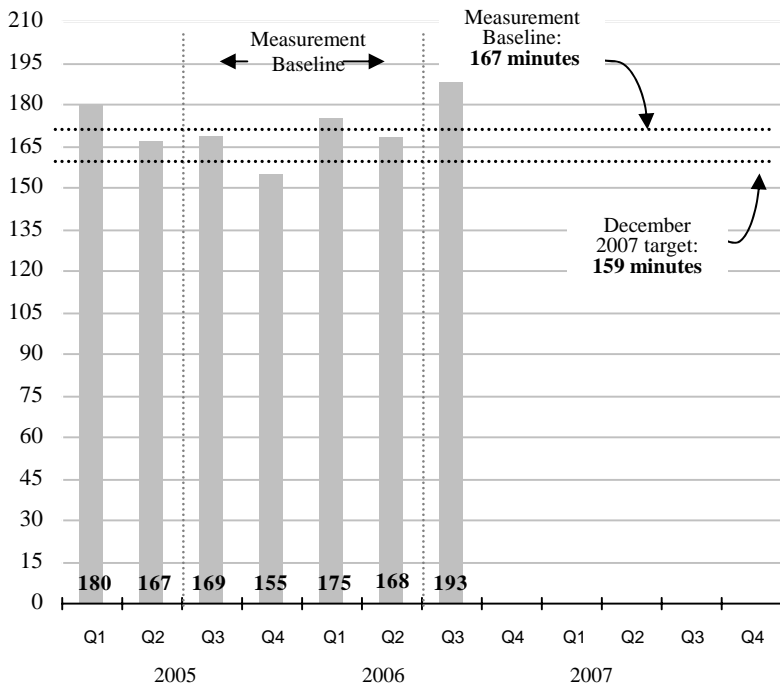
	Cumulative Completed	Cumulative On-Time and On-Budget	Cumulative Cost Completed (in millions)
2003Q3	1	1	\$68.5
Q4	2	2	\$68.6
2004 Q1	3	3	\$68.8
Q2	5	5	\$69.9
Q3	7	6	\$71.0
Q4	14	12	\$82.5
2005 Q1	14	12	\$82.5
Q2	19	17	\$118.5
Q3	21	18	\$139.4
Q4	31	28	\$222.2
2006 Q1	32	29	\$231.1
Q2	44	38	\$256.9
Q3	56	46	\$310.2
Q4			

# What Actions is WSDOT Taking to Address Rising Construction Costs and the Shrinking Competitive Bidding Climate?

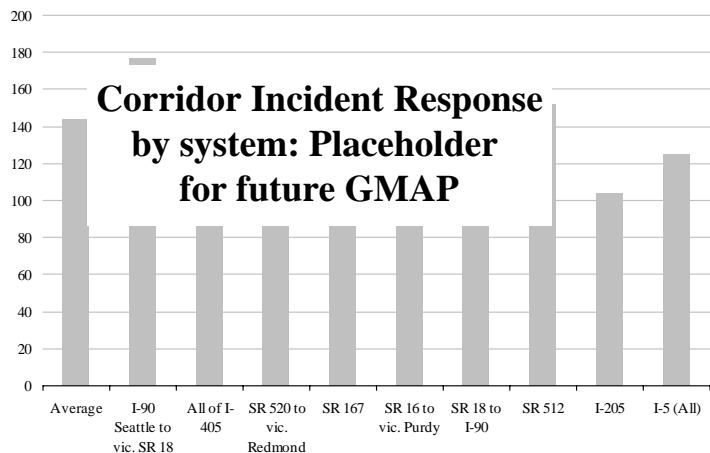
- WSDOT continues to work with industry to address the deteriorating competitive bidding market. Currently, WSDOT is working to develop a fuel escalation clause for contracts.
  - The clause is designed to transfer some of the risk of cost escalation from the contractor to the state, reducing the effect of cost uncertainty on contractors' bids, which may result in contractors submitting lower bids.
  - Contracts that contain the clause provide for an upward or downward adjustment in the price WSDOT pays for fuel on those projects. WSDOT will provide additional payment or receive a credit, depending on whether prices rise or fall.
  - In August, WSDOT solicited input from the Washington Asphalt Paving Association and implemented an asphalt price adjustment in contracts. Its effectiveness is assessed on an ongoing basis and will be reported at future GMAP sessions.
- Disaggregating larger projects into smaller contracts to attract additional bid interest
  - A successful example is the I-405 corridor project, currently being bid as several smaller projects to attract more bid interest.
    - ✓ I-405, SR 520 to SR 522: The request for Statements of Qualification to bid generated 5 proposals. Of this group, 3 were determined to be qualified bidders.
    - ✓ I-405, 112th Ave SE to SE 8th St Widening: 6 SOQs submitted, 4 qualified to bid.
    - ✓ I-405, Springbrook Creek Wetland and Habitat Mitigation Bank: 15 SOQs submitted, 6 qualified to bid.
- Utilize Alternate Contract Methodologies to Maximize Value Within Budgeted Dollars
  - SR 167 (15th St SW to S 180th S- project to add lanes): All bids for the base project scope plus alternate (optional) project elements exceeded available funds. The contract was awarded for the base project scope only, which was within the funds available for the contract award. If we had not used the accumulative alternate bids method, it is likely that bids would have been too high, and would have had to have been rejected, and WSDOT would have to re-scope the project, causing several months' delay.
  - US 12, Attalia Vic . (Walla Walla County - project to add four lanes): Bidders were allowed to submit base proposals, plus bids for additional work. Proposals for the additional work (a retaining wall) allowed alternate construction methods and materials. We accepted the lowest base bid, plus work proposed through an alternate contract. The successful bid used a more cost-effective material for the alternate work, resulting in project cost that was \$60,000 below Legislative expectations.
- In its *2007-09 Budget Request*, WSDOT updated estimates on a project-by-project basis to reflect current costs (June 2006). WSDOT will continue to actively monitor actual contract bid experience as captured in the CCI in order to facilitate accurate cost estimates.

# What is WSDOT and WSP's Record in Reducing the Average Duration of Incidents Lasting Over 90 Minutes by Five Percent for Key Highway Segments?

Average duration of incidents lasting over 90 minutes or above  
In minutes



Source: WITS and CAD



## Analysis:

- Between July 1, 2005 and June 30, 2006, the average duration of incidents lasting over 90 minutes was **167 minutes**.
- The target for December 2007 is a five percent reduction to **159 minutes** and includes the following nine highway systems in western Washington:
  - I-90 – Seattle to North Bend
  - I-405 – Connects drivers across Lake Washington and throughout the Puget Sound region
  - SR 520 to vic. Redmond – Extends 12.82 miles from Seattle in the west to Redmond in the east.
  - SR 167 – Primary highway connecting south King and north Pierce counties to the Seattle/Bellevue metropolitan area
  - SR 16 to vic. Purdy – Runs through Tacoma and crosses the Tacoma Narrows to Gig Harbor.
  - SR 18 to I-90 – Connects SR 99 in south King County with I-90.
  - SR 512 serves drivers in Pierce County and connects the Tacoma area to Puyallup.
  - I-205 – Connects drivers in Clark County to Portland
  - I-5 – Vancouver to Canadian Border
- Data is being further evaluated to understand the spike in incident duration in 2006 Q3.

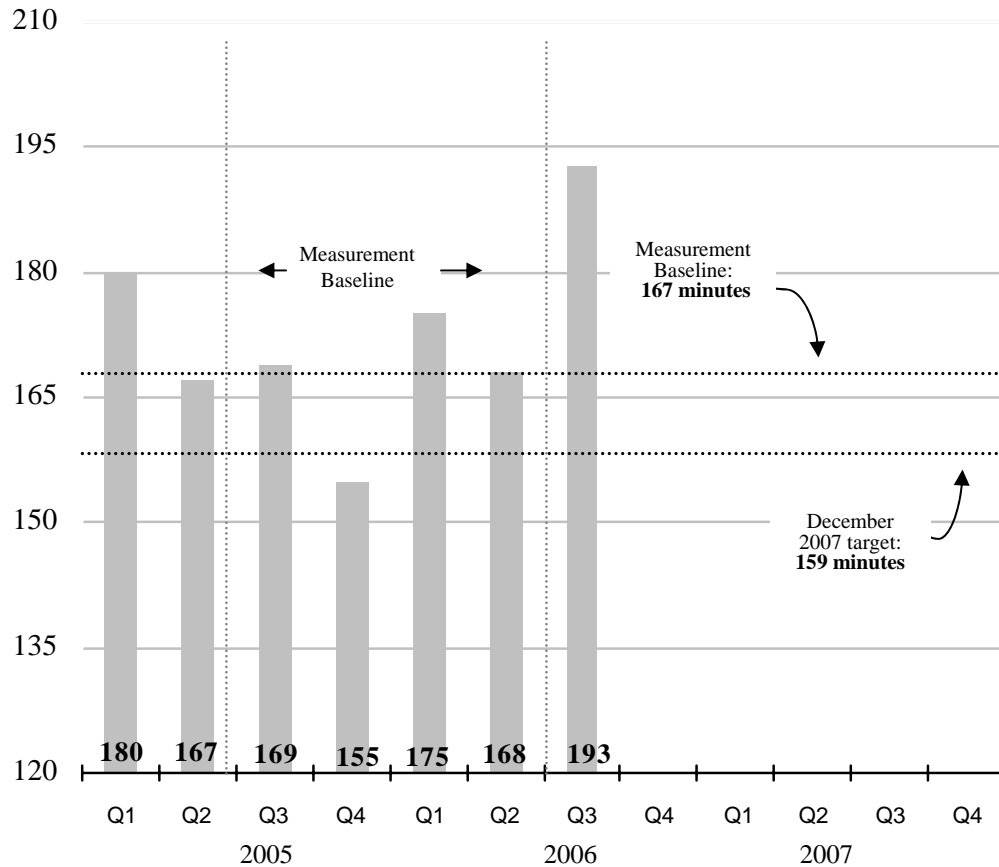
## Actions:

- WSDOT 2007-09 Budget Request includes funding for a tow performance program for heavy trucks, beginning July 2007, Activity Leads: Rick Phillips, WSDOT and Mike DePalma, WSP.
  - Modeled after successful program in Florida that is responsible for clearing 94% of heavy truck collisions in under 90 minutes.
  - Plan would provide incentives to the towing industry to improve equipment standards, improve training, and agree to a performance agreement.
- Increase the number of counties allowing offsite extrications of deceased by July 2007. Activity Leads: Mike DePalma, WSP and Rick Phillips, WSDOT.
  - WSP, WSDOT, and the Thurston County Coroner signed the state's first formalized agreement in April 2006.

# DETAILED VIEW OF CHART FROM SLIDE 6

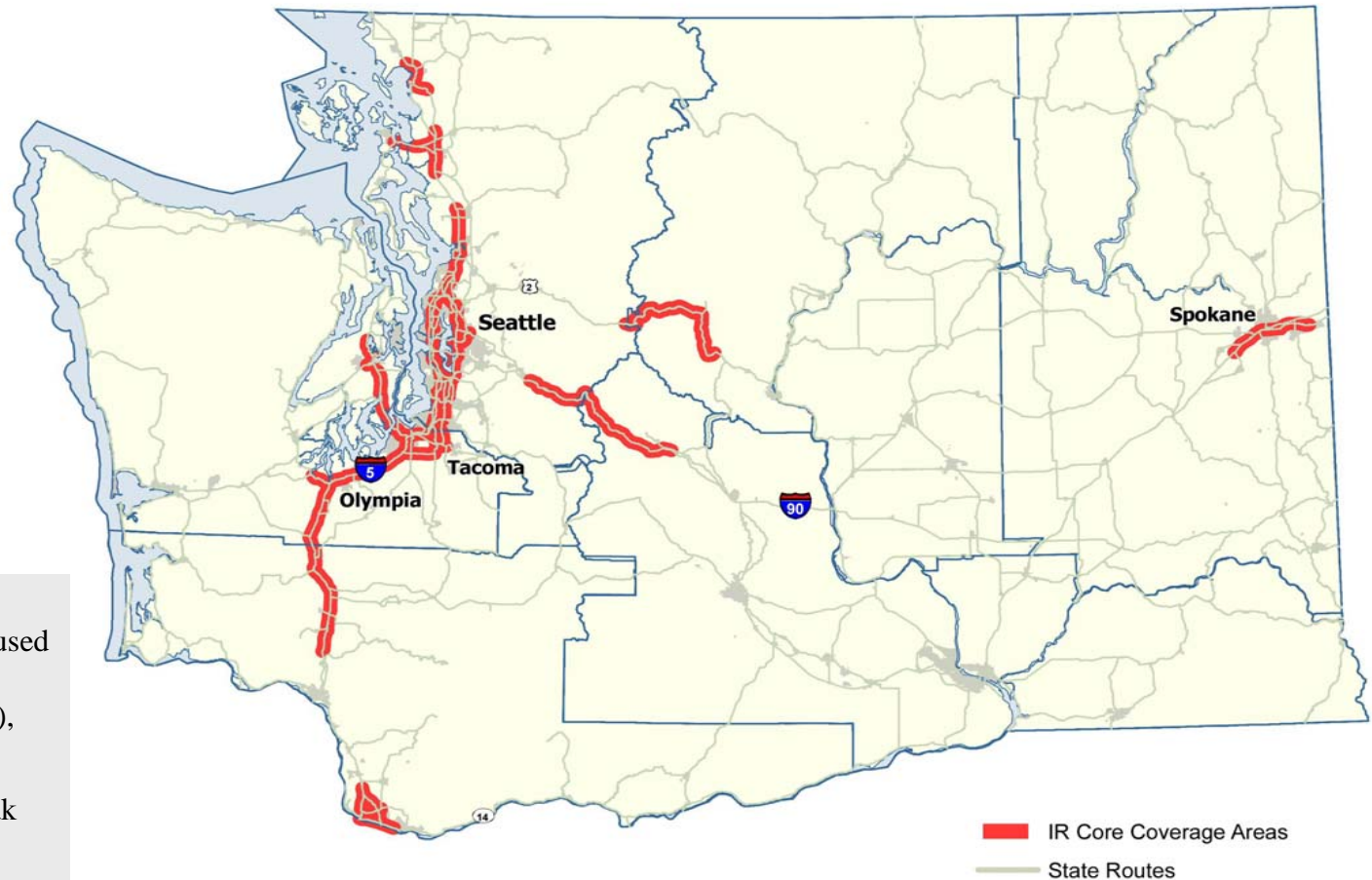
## Incident Response

Average duration (minutes) of incidents lasting over 90 minutes or above  
Y-Axis Adjusted: chart included for readability purposes only.

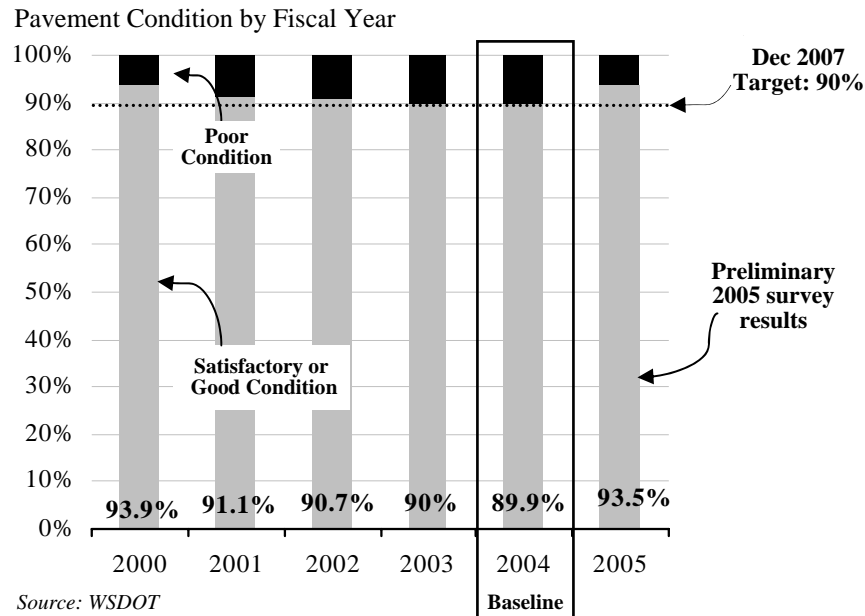


Source: WITS and CAD

# WSDOT and WSP: Where Are Incident Response's Core Coverage Areas?



# What WSDOT's Record of Preserving 90% of Roads in Satisfactory or Good Condition?



- Baseline for evaluating the condition of pavement is 89.9% of pavement in good or satisfactory condition.
  - Preliminary analysis of 2005 data suggests an improvement from 2004, which may have resulted from increased experience with Lowest Life Cycle Cost rehabilitation.
  - 2006 data will be available by October 2007. The results of the next paving season (May - October 2007) will not be available until October 2008.
  - WSDOT owns and maintains 20,099 lane miles of highway, including ramps, collectors, and special use lanes.
- WSDOT anticipates the number of paved miles in good or fair condition will decrease in the long run.
  - WSDOT's pavement rehabilitation program is fully funded for chip seals, mostly funded for Hot Mix Asphalt (up to 90%), and mostly unfunded for concrete pavement.
  - Since "due" pavements and "past due" pavements are only partially funded, the backlog is expected to grow and pavement conditions are expected to deteriorate.

## National Comparison:

- WSDOT rates its pavement on three factors:
  - Pavement Structural Condition
  - Rutting
  - Roughness
- FHWA rates 50 states' pavement condition, but is much narrower in focus
  - Only assesses one factor: roughness
- Based on the 2004 FHWA rating of roughness, Washington's pavement ranked 23<sup>rd</sup> in the nation.

## Analysis and Actions:

- Resolve shortcomings of models to predict concrete pavement performance and best timing for rehabilitation.
  - The current model is 30 years old and needs revaluation and refinement. Work from 2005 indicates that it does not adequately measure deterioration rates for concrete pavements.
  - Understanding deterioration and adequately planning rehabilitation timing is key: if done too early, pavement life is wasted; if too late, costly repair may be required.
  - WSDOT is working with UW to improve its models to determine the best time for rehabilitation. This is expected to be completed by Fall 2007.

## Ongoing Actions to Further Improve Pavement:

- Hot mix asphalt surface life has improved 14% over the past six years, though vehicle miles traveled has increased by 10%.

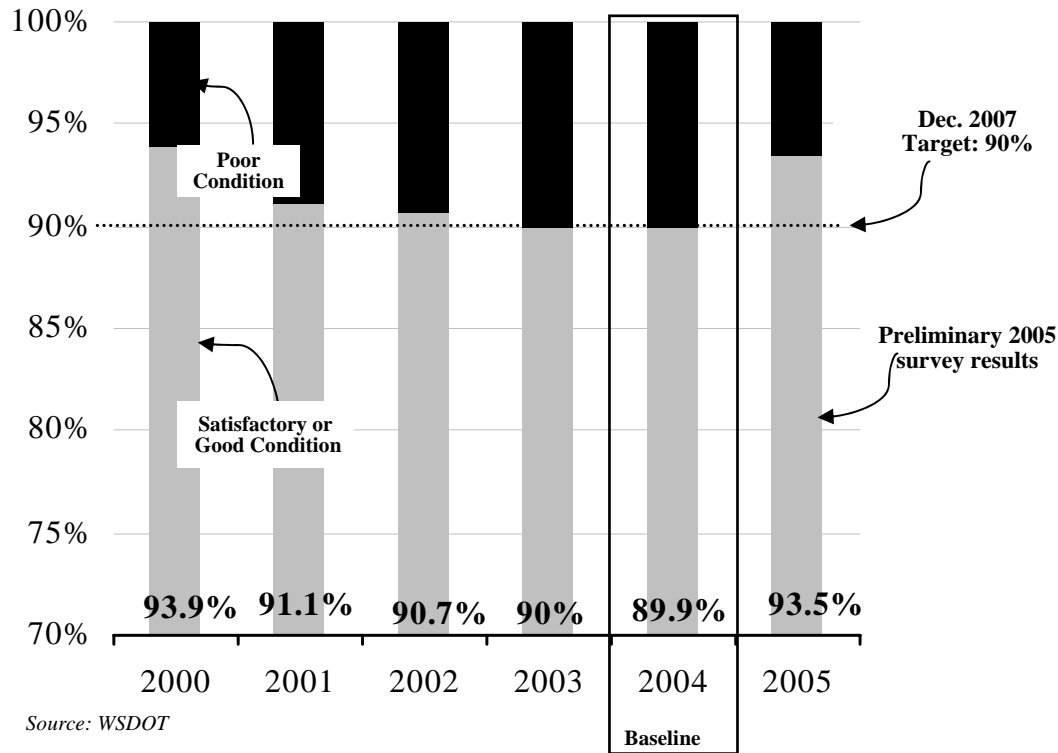
The keys lie chiefly in the following areas:

- Newer specifications using performance grade binders selected for expected climate regimes and traffic conditions;
- Use of Superpave mix designs keyed to temperature and traffic expectations;
- Improved asphalt pavement repair and asphalt placement techniques;
- Better attention to construction details and inspection, and,
- Continued application of LLCC rehabilitation programming.

# DETAILED VIEW OF CHART FROM SLIDE 8

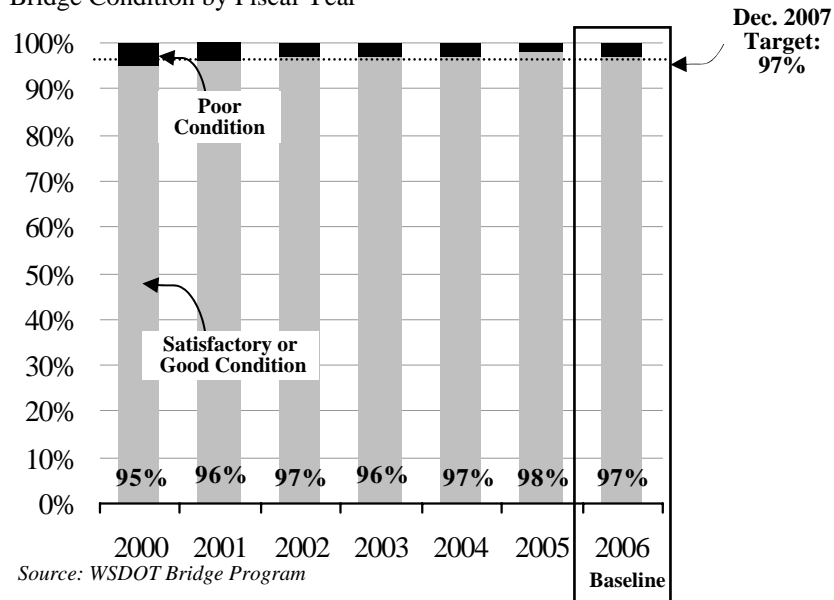
## Road Conditions

Percentage of pavement in satisfactory or good condition by fiscal year  
Y-Axis Adjusted: chart included for readability purposes only.



# What is WSDOT's Record in Maintaining 97% of Bridges in Satisfactory or Good Condition?

Bridge Condition by Fiscal Year\*



## Bridge Preservation Program Consists of Four Elements:

- Inspect one-half of all bridges every year.
- Bridge Repair, Rehabilitation, and Replacement:
  - Repair bridges with deteriorated elements;
  - Rehabilitate mechanical and electrical operating systems on movable bridges;
  - Replace bridges as needed.
- Preservation – Extend bridge service life by repainting steel structures; also repair and overlay of concrete bridge decks.
- Risk reduction – Seismic retrofit of bridges and scour repair of bridge piers in rivers. This work provides a proactive approach to minimizing damage to bridges due to earthquake and higher water events.

## Analysis and Actions:

- The State's ability to address deficient bridges is highly dependent on federal aid program funding.
- Currently, WSDOT is funded and programmed to replace one bridge and to repair three bridges by contract before December 31, 2007.

## Bridge Program Dive Team Action: Efficiency Savings

- Performed 71 underwater bridge and structure inspections since its 2004 formation.
- Cost of team's inspection activities run 40% of the cost of comparable work performed by the consultant community.
  - Achieved \$262,000 in real savings.

- WSDOT does not expect a significant change in the condition of bridges before December 31, 2007.
- June 2006 data indicates that 78 out of 3,088 structures are in poor condition (97.5% of bridges in fair or better condition).
  - Even a target of 1% increase of bridges in good condition would have required improving at least 31 bridges during the 2006 construction season to show an impact by December 2007
- WSDOT's long term investment goal is to maintain 95% of its bridges at a structural condition of at least fair based on national criteria set by FHWA.
  - Good — Range from no problems to minor structural deterioration.
  - Fair — Primary structural elements are sound, but may have minor deficiencies.
  - Poor—Advanced deficiencies exist, and may have seriously affected primary structural components.

\*No bridge that is rated as "poor" is unsafe for public travel.